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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/852,158	05/06/1997	SHARAD MATHUR	MSI-151US	6705

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EXAMINER

OPIE, GEORGE L

ART UNIT

PAPER NUMBER

2151

DATE MAILED: 03/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	08/852,158	Mathur et al.
	Examiner George L. Opie	Art Unit 2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

1)  Responsive to communication(s) filed on 6 December 2001.

2a)  This action is FINAL.      2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)  Claim(s) 1-40 is/are pending in the application.

4a) Of the above claim(s)  is/are withdrawn from consideration.

5)  Claim(s)  is/are allowed.

6)  Claim(s) 1-40 is/are rejected.

7)  Claim(s)  is/are objected to.

8)  Claim(s)  are subject to restriction and/or election requirement.

**Application Papers**

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on  is/are objected to by the Examiner.

11)  The proposed drawing correction filed on  is: a)  approved b)  disapproved.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some \* c)  None of the CERTIFIED copies of the priority documents have been:

1.  received.

2.  received in Application No. (Series Code / Serial Number) .

3.  received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

14)  Notice of References Cited (PTO-892)

17)  Interview Summary (PTO-413) Paper No(s). .

15)  Notice of Draftsperson's Patent Drawing Review (PTO-948)

18)  Notice of Informal Patent Application (PTO-152)

16)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) .

19)  Other: \_\_\_\_\_

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## DETAILED ACTION

This Office Action is responsive to Applicant's request for reconsideration, filed 6 December 2001.

1. **Claim Rejections - 35 U.S.C. § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto (U.S. Patent 5,835,765) in view of Kubo (U.S. Patent 5,881,284).

As to claim 1, Matsumoto teaches a method of controlling memory usage in a computer system (effectively utilizing the primary storage, p18 23-27) having limited physical memory (storage area has a finite size, p8 52-54) wherein one or more application programs execute in conjunction with an operating system (execute plural application programs in parallel, p8 45) the method comprising: the operating system wielding control over said one or more application programs (resource manager 15 checks the amount of memory used, p15 28-33) to reduce memory usage (program ends immediately, p8 52-54).

Matsumoto does not explicitly disclose the additional limitations detailed below. Kubo teaches setting a plurality of memory thresholds (threshold values are provided, p4 30-42).

It would have been obvious to combine the multiple threshold scheme as taught by Kubo with Matsumoto's teachings because an incremental governor provides an increasing (systematic escalation) of constraints on program operations that corresponds with the machine parameters, thereby facilitating the most efficacious processing of user applications by enabling executions to continue to certain times at which commensurate measures are triggered to maintain system integrity.

As to claims 2-6, "Official Notice" is taken that the limiting, closing, or terminating of a program are well known in the art (MPEP2144.03). It would have been obvious to combine the limiting, closing, or terminating capability with the

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combined system of Matsumoto and Kubo because these operations reduce an applications memory usage.

As to claim 7, "Official Notice" is taken that reclaiming unused stack memory is well known in the art (MPEP2144.03). It would have been obvious to combine the unused stack memory reclamation with the Matsumoto/Kubo system because these operations reduce an applications memory usage, thereby improving system performance.

As to claim 8, one skilled in the software engineering art, working on memory conservation, would have included a provision for discarding read-only memory. The practice of efficiently managing memory directs disposal of storage sections that are not currently in use so that other pages can utilize the unused locations which are reserved but not needed/exploited.

As to claims 9-16, note the rejections of claims 1-8 above. Claims 9-16 are the same as claims 1-8, except claims 9-16 are computer program product claims and claims 1-8 are method claims.

As to claim 17, note the rejections of claims 5-8 above.

As to claims 18 and 19, the recitations regarding the reclaiming and discarding in connection with further thresholds would have been obvious modifications -- variations on claim 17 above.

As to claim 20, note the rejections of claims 3-5 above.

As to claim 21, note the rejection of claim 20. Claim 21 is basically the same as claim 20, but for the difference of the "requiring" in lieu of "prompting" a user to select the respective application at issue, which would have been an obvious modification for one skilled in the art.

As to claim 22, note the discussion of claim 17 above. Claim 22 is the same as claim 17, except claim 22 is a computer program product claim and claim 17 is a method claim.

As to claim 23, note the discussion of claim 1 above; claim 23 is an apparatus claim and claim 1 is a method claim. Claim 23 is the same as claim 1, but for the added limitation of virtual memory sans secondary storage which would have been an obvious modification as it has been known in the art.

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As to claims 24-30, note the discussion of claims 2-8 above. Claims 24-30 are the same as claims 2-8 respectively, except claims 24-30 are apparatus claims and claims 2-8 are method claims.

As to claim 31, note the rejection of claim 20 which incorporates the claim 17 discussion too. Claim 31 is the same as claim 20, except claim 31 is an apparatus claim and claim 20 is a method claim.

As to claims 32 and 33, note the rejection of claim 2, which incorporates claim 1 limitations. Claim 32 is the same basically as the features in claim 2 sans the 2nd threshold.

As to claims 34-35, "Official Notice" is taken that the message loop facility for communicating messages to and from a program is well known in the art (MPEP2144.03).

As to claims 36-39, note the discussion of claims 32-35 above. Claims 36-39 are the same as claims 32-35, except claims 36-39 are computer program product claims and claims 32-35 are method claims.

3. Claim 40 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kannan et al. (US Patent 5,815,702) in view of Bishop et al. (US Pat 5,826,082).

As to claim 40, Kannan (p4 52 – p5 27) teaches an application program (word processor) that resides in a computer-readable memory (location that stores ... the application) for execution by a processor in conjunction with an operating system (operating system 111) the application program having a message loop that receives messages from an operating system message loop that receives events or messages from the operating system) the application program being responsive to a particular message received through its message loop (receives from the operating system ... and provides them to the application).

Kannan does not explicitly disclose the additional limitations detailed below. Bishop teaches an application operation that is programmed to reduce its current use of memory (resource manager determines in decision block 204 ... suspend a prior request, p4 31-38). It would have been obvious to combine the memory constraining as taught by Bishop with the teachings of Kannan because the application memory minimization performed through the messaging system is an unobtrusive/transparent scheme for maintaining operations within the system's storage parameters.

**4. Response to Applicant's Arguments:**

Applicant argues (claims 1-39) that the combination of teachings from Kubo and Matsumoto does not meet the limitation of wielding increasing control over programs' memory usage in connection with respective memory thresholds. Contrary to Applicant's contention, the cited Matsumoto/Kubo teachings do read-on the claimed controlling of memory usage in proportion with set thresholds. Clearly, Matsumoto shows the governing of a program's memory usage by a process manager that monitors and controls program execution. Matsumoto's operation management system wields control over the execution of each program. Matsumoto monitors memory usage, and contingent thereon the system regulates the execution of the respective program. In conjunction with this program control scheme, the Kubo reference provides a system that increases control at increasing thresholds. Kubo's thresholds in connection with resource usage clearly reads-on the recited critical memory thresholds. In considering the memory thresholds and corresponding program control recitations, the Office has observed that Applicant uses terminology that has broad meaning in the art, and thus requires a broad interpretation of the claims in determining patentability of the disclosed invention. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant should set forth claims in language that clearly, distinctly, unambiguously and uniquely define the invention. The fact that Applicant has not narrowed the definition/scope of the current claims implies that Applicant intends an extensive coverage breadth of the claims, which is clearly met by the combined teachings of Matsumoto and Kubo as set forth *supra*. Consequently, the claimed memory controls related to thresholds, in the manner recited, does not constitute a non obvious improvement over the prior art.

Applicant additionally "submits that it would not have been obvious to one of ordinary skill in the art to combine Matsumoto and Kubo." In response, however, it is noted that the test for the relevance of a cited combination of references is: "whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention," *In re Gorman*, 933 F.2d at 986, 18 USPQ2d at 1888. Subject matter is unpatentable under section 103 if it 'would have been obvious ... to a person having ordinary skill in the art.' While there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art specifically suggest making the combination: *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)." Such suggestion or motivation to combine prior art teachings can derive solely from the existence of a teaching, which one of ordinary skill in the art would be presumed to know, and the use of that teaching to solve the same [or] similar problem which it addresses. *In re*

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*Wood*, 599 F.2d 1032, 1037, 202 USPQ 171, 174 (CCPA 1979). "In sum, it is off the mark for litigants to argue, as many do, that an invention cannot be held to have been obvious unless a suggestion to combine prior art teachings is found in a specific reference." *In re Oetiker*, 24 USPQ2d 1443 (CAFC 1992). Now, clearly, the motivation for controlling memory is ubiquitous to all computing environments, and therefore, an ordinary average software engineer working with systems having limited memory would have readily applied the thresholds and controlling of memory as taught by Kubo and Matsumoto for incrementally governing (friendly controlling) program operations.

Applicant requests (claims 2-6) that references be provided that teach the respective elements that were subject to Official Notice. Pursuant to this request, Applicant is directed to the references cited in the 6 October 1999, Office Action (i.e., Bishop, Matsumoto, Kannan, and Jewett). Also, the Microsoft Windows User's Guide Version 3.0 is provided to show additional teachings for controlling program operations and freeing up memory .

Applicant argues (claim 40) that the combination of Kannan and Bishop does not meet the limitation of an application responsive to reduce its current use of memory. Despite Applicant's argument, the combined system of Kannan and Bishop does read on the foregoing recitation as broadly claimed. The rejection of claim 40 contains a detailed mapping of each claim element with its corresponding equivalent component taught by the cited art. Kannan teaches the application component along with the other claim features sans the memory reduction limitation which is taught by Bishop. Clearly, Kannan's teachings meet the application responsive to OS directives; see col 4, and, Bishop's resource manager minimizes memory usage (c4 l52-62) which functions to reduce memory use. Taken together, Kannan and Bishop provide teachings that make a *prima facie* case of obviousness of the claim 40 limitations.

Applicant's arguments, filed 6 December 2001, have been fully considered but are not deemed to be persuasive. For the reasons detailed above, the rejections set forth in the previous Office Action under **35 U.S.C. § 103** are maintained.

The Office acknowledges Applicant's inclusion of an electronic copy of Applicant's response on a 3½inch floppy disk, and thus, the Office would like to thank Applicant for submitting a copy of the response in electronic form as it helps in processing the case.

5. THIS ACTION IS MADE FINAL.

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A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R.  1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

**6. Request for copy of Applicant's response on floppy disk:**

Please help expedite the prosecution of this application by including, along with your amendment response in paper form, an electronic file copy in WordPerfect, Microsoft Word, or in ASCII text format on a 3½ inch IBM format floppy disk.

Please include all pending claims along with your responsive remarks. Only the paper copy will be entered -- your floppy disk file will be considered a duplicate copy. Signatures are not required on the disk copy. The floppy disk copy is not mandatory, however, it will help expedite the processing of your application. Your cooperation is appreciated.

**7. Contact Information:**

**PTO Policy for Facsimile Submissions:**

- AFTER-FINAL faxes must be signed and sent to (703) 746-7238.
- OFFICIAL faxes must be signed and sent to (703) 746-7239.
- NON OFFICIAL faxes should be sent to (703) 746-7240.

All OFFICIAL faxes will be handled and entered by the docketing personnel. The date of entry will correspond to the actual FAX reception date unless that date is a Saturday, Sunday, or a Federal Holiday within the District of Columbia, in which case the official date of receipt will be the next business day. The application file will be promptly forwarded to the Examiner unless the application file must be sent to another area of the Office, e.g., Finance Division for fee charging, etc.

- All responses sent by U.S. Mail should be mailed to:  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

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- Hand-delivered responses should be brought to Crystal Park Two, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist). All hand-delivered responses will be handled and entered by the docketing personnel. Please do not hand deliver responses directly to the Examiner.
- Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at **(703) 305-9600**.
- Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Opie at (703) 308-9120 or via e-mail at [George.Opie@uspto.gov](mailto:George.Opie@uspto.gov). Internet e-mail should not be used where sensitive data will be exchanged or where there exists a possibility that sensitive data could be identified unless there is an express waiver of the confidentiality requirements under 35 U.S.C. 122 by the Applicant. Sensitive data includes confidential information related to patent applications.



ZARNI MAUNG  
PRIMARY EXAMINER